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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,184	01/03/2006	Yoshitsugu Morita	71,051-003	7050

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EXAMINER	
WESTERBERG, NISSA M	

ART UNIT	PAPER NUMBER
1618	

MAIL DATE	DELIVERY MODE
06/02/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/526,184	MORITA ET AL.	
	Examiner	Art Unit	
	Nissa M. Westerberg	1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE ____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicants' arguments, filed March 12, 2010, have been fully considered but they are not deemed to be fully persuasive. The following rejections and/or objections constitute the complete set presently being applied to the instant application.

Response to Arguments

2. Applicant's arguments with respect to the art rejections of the pending claims have been considered but are moot in view of the new ground(s) of rejection. Applicants' arguments with respect to the pieces of prior art still being applied are addressed at the end of the new rejection presented below.

Claim Rejections - 35 USC § 112 – 1st Paragraph

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims1, 3 – 5, 8 – 10 and 12 - 15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention. This is a new matter rejection. The Examiner was unable to locate support in the application as originally filed for the preparation of component (A) utilizing a combination of the diolefins now recited in amended claim 1. Support for the listed diolefins used individually was identified but not for the use of multiple diolefins in the same linear organosilicon polymer.

If Applicant is in disagreement with the Examiner regarding support for the amended claim, Applicant is respectfully requested to point to page and line number wherein support may be found for the instant invention.

Claim Rejections - 35 USC § 112 – 2nd Paragraph

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1, 3 – 5, 8 – 10 and 12 – 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear if applicant is claiming final products for the linear organosilicon polymer (A) with alkylene units that are unsaturated or products that are saturated but contain $-CH_2-$ groups as in polyethylene between the diorganopolysiloxane units. Please clarify.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1, 3 – 5, 8 -1 0 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalle et al. (US 6,013,682) in view of Lochhead et al. (Cosmetics and Toiletries 1993) and Drake et al. (US 5,270,424).

Dalle et al. discloses silicone in water emulsions with a wide variety of silicone volume fractions (abstract). As shown in the examples, a linear organosilicon polymer whose main chain is composed of diorganosiloxane units and alkylene units (component A of the instant claims) is prepared by a platinum catalyzed hydrosilation reaction of dimethylvinylsiloxy terminated polydimethylsiloxane with a organohydrogenpolysiloxane with the average formula $Me_2HSiO(Me_2SiO)_{20}SiMe_2H$ (col 7, ln 49 – 65). The molecular weight of the prepared silicone can be in the range of about 1 mm^2/sec at 25°C to in excess of 10^8 mm^2/sec at 25°C (col 6, ln 55 – 56). The silicone loading of the emulsion can range from about 1 to about 94 weight percent (col 6, ln 53 – 54). The prepared emulsion are useful in the standard application for silicone emulsions, including skin creams, facial treatments, personal and facial cleansers, hair shampoos, hair conditioners, hair sprays and mousses (col 7, ln 7 – 19). When used in personal care products, they are generally incorporated in amounts of about 0.01 to about 50 weight % of the product (col 7, ln 28 – 31). They can be mixed with a variety of ingredients, including polymers, deposition polymers, surfactants detergents, moisturizing agents and other conventional care ingredients (col 7, ln 31 – 37).

Dalle et al. does not explicitly disclose the inclusion of an oil that is liquid at room temperature and does not contain hydrosilation reactive groups, component (B) of the instant claims.

Lochhead et al. discloses dimethicone, an oil that is liquid at room temperature and does not contain hydrosilation reactive groups, as a conventional ingredient in cosmetic compositions (p 117, col 2). Dimethicone functions as an emollient, lubricant and water repellant in hair and skin care products. Depending on the form of the product (e.g., shampoo or skin care emulsion) the amount of dimethicone can range from 0.5 to 10% of the composition. The dimethicone fluid can have a viscosity ranging from 0.65 to 50,000 centipoise (cps).

Dalle et al. uses a monomer with a vinyl group only contains 2 carbons, which is fewer carbons than would be present when one of the diolefins recited in claim 1 is used in the preparation of the polymer.

Drake et al. discloses organosilicon compounds made by reacting a silicon compound having at least one silicon-bonded hydrogen atom with a diene having at least 5 carbon atoms wherein the unsaturation is located at the terminal carbon atom in the present catalyst (col 2, ln 5 – 15). Exemplified dienes include 1,4-pentadiene and 1,5-hexadiene (col 2, ln 63 - 66). The process will result in a final polymer wherein the organosilicon blocks are present in the chain along with alkylene linkers, whose length will correspond to the length of the diene present in the polymerization reaction. As the claims presently under examination are product claims, the newly added limitation is a product-by-process limitation. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the

prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted) **MPEP 2113**. The process of this reference results in polymers of organosiloxane and blocks of 4 or 5 intervening $-CH_2-$ units, the same polymeric structure as that produced by the instant claims when 1,4-pentadiene or 1,5-hexadiene are used.

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to prepare linear organosilicon polymers with longer alkylene units in the main composed with the diorganosiloxane units than those which are prepared with a 2 carbon alkylene units as in Dalle. The lengthening of the hydrocarbon units between the diorganosiloxane units will alter the overall properties of the polymer by altering the balance between the siloxane units and the intervening hydrocarbon moieties. Depending on the intended use of the prepared polymer and the desired properties of the polymer (e.g., flexibility of the polymer backbone, inter- and intramolecular interactions and hydrophobicity/hydrophilicity characteristics), the alteration of the length of the alkylene units can provide polymers with the desired properties.

It also would have been obvious to the person of ordinary skill in the art at the time the instant invention was made to incorporate dimethicone into the silicone emulsion containing cosmetic composition as taught by Dalle et al. The person of ordinary skill in the art would have been motivated to make those modifications and reasonably would have expected success because Dalle et al. teaches that the

emulsion comprising component (A) can also include conventional ingredients such as dimethicone to act as emollient and water repellant in the formulation. The amount of the various polymer ingredients present in the formulation and the desirable viscosity depend on the type of personal care product being prepared. The amount of a specific ingredient in a composition and the viscosity are result effective parameters that a person of ordinary skill in the art would routinely optimize. Optimization of parameters is a routine practice that would be obvious for a person of ordinary skill in the art to employ and reasonably would expect success. In optimizing the amounts of ingredients (A) and (B), the weight ratio of these components would also be optimized.

Applicant has argues that Dalle et al. does not disclose, teach or suggest a linear organosilicon polymer which is formed from the two claimed components and the main chain only comprise siloxane units. These arguments are unpersuasive. While both components contain the word "siloxane", one of the reactants in Dalle et al. are dimethylvinylsiloxy terminated. The vinyl refers to CH_2=CH- groups attached to the terminal silicon atoms that upon polymerization end up as alkylene units in the main chain. In fact, these ingredients follow the same nomenclature and general procedure as that used by Applicant in, for example, Practical example 1 of the instant application, which provides a structure of the resulting polymer that clearly shows the –CH_2-CH_2- groups between the diorganosiloxane (specifically, dimethylorganosiloxane) units of the linear organosilicon polymer.

Applicants also request rejoinder of process claim 6 and 7. As no indication of allowable subject matter has been made, the request for rejoinder is denied.

11. Claims 1, 3 – 5, 8 – 10 and 12 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dalle et al., Lochhead and Drake as applied to claims 1, 3 – 5, 8 – 10 and 12 - 15 above, and further in view of Gee (US 4,602,878).

As discussed in greater detail above, Dalle et al., Lochhead and Drake teach linear organosilicon polymer with diorganosiloxane unites separated by hydrocarbon units whose lengths correspond to the length of the diolefins recited in amended claim 1.

Neither reference explicitly discloses why certain mean particle sizes are desirable in aqueous emulsions.

Gee discloses that fine emulsions of polyorganosiloxanes of less than 0.3 microns have a translucent or transparent appearance (col 1, ln 7 – 17). Such emulsions are prepared by mixing a polyorgansiloxane with at least one surfactant and rapidly dispersing the oil concentrate in water (col 2, ln 35 - 54). This is the same process used to prepare the emulsions in Dalle et al.

It would have been obvious to the person of ordinary skill in the art at the time the invention was made to vary the particle size of the dispersed phase in the emulsion. The person of ordinary skill in the art would have been motivated to make those modifications to alter the physical properties of the emulsion such as the appearance and reasonably would have expected success because Dalle et al. and Gee disclose emulsions with a different particle sizes that will have different final appearances.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nissa M. Westerberg whose telephone number is (571)270-3532. The examiner can normally be reached on M - F, 8:00 a.m. - 4 p.m. ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Hartley can be reached on (571) 272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jake M. Vu/
Primary Examiner, Art Unit 1618

NMW